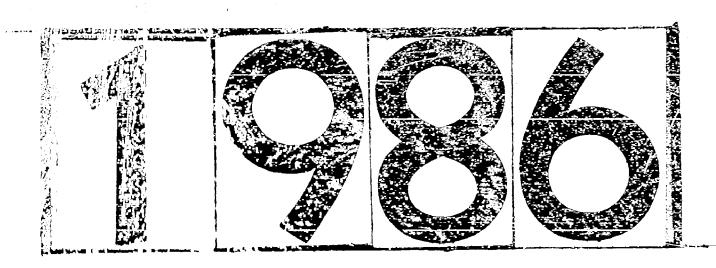
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OR PRESSURES RESEARCH
College Avenue Pool
October 15, 1952

Director Office of Naval Research 1000 Geary Street San Francisco 9, California

## HONTRIX STATUS REPORT - SEPTEMBER 1952

Contract N7-car-295-Task 9 Project Emmber NR 661-003

Beer Sir:

Progress on the contract for the month of September has been as follows:

- 1. Final additions to, and modifications of, the instrumentation of the molecular beam are continuing. Reflected signal to background noise level is being improved prior to full-scale traverses of the reflected beam.
- 2. During the month of September, several test programs made use of the No. 3 wind tunnel. The initial tests to determine base pressures of cone-sylinder models in a supersonic low density flow were completed. Analysis of the data indicates that the next phase of this program can begin. Static probe tests were carried out for a separate N.A.C.A. sponsored program. Final tests of the semi-adjustable diffuser were also concluded; see item 3 below.
- 3. The evaluation tests of a central body diffuser were concluded, and analysis of the data begum. Preliminary indications are that such a diffuser is unsatisfactory for supersonic low density flow systems. A report describing this program will be prepared.
- 4. The come-drag single component balance design was completed and fabrication is well under way.
- 5. The modification of the rotating cylinder drag balance is continuing.
- 6. The following reports are in various phases of preparation:
  - a) A report describing the design analysis of a free molecule flow hot wire probe for wind tunnel use is being prepared, and will be issued shortly.
  - b) A report describing the design and operational tests of a rotating sylinder apparatus for use in low density gas dynamics research is being written.

- c) See item 7 below.
- d) A report describing the results of a subscnic hert transfer program using spherical models is being written.
- 7. The following report was issued in September: AE-150-104, "Design and Testing of a Each 4 Axially Symmetric Nozzle for Rerefied Gas Flows", by J. H. Owen and F. S. Sherman.

Abstract: The report presents an improved method of design for low density supersonic normles. Design data for a M = 4.0 normle is included together with a description of an experimental evaluation program performed to determine the static pressure and Mach number profiles for this normle. The design method appears successful and future applications should be possible with a minimum of calculation effort.

8. Visitors: The following persons visited the project during the month:

#. Jost

H. E. Snith, USA

R. A. Ritmann

A. C. Morrison, Lt. USN

Ernst Schmidt Pierre Danel

R. M. Fincher

E. G. Rieth

A. C. Mayer

- Techn. Hochechule, Darmatadt, Germany

- Office of Naval Research, San Francisco, Calif.

- I.N.M., San Francisco, Calif.

- Diet. Security F.O.B., San Francisco, Calif.

- Braunschweig, Germany

- Grenoble, France

- Office of Raval Research, Sen Francisco, Calif.

- Office of Navel Research, San Francisco, Calif.

- Office of Naval Research, San Francisco, Calif.

Very truly yours,

S. A. Schaaf

Faculty Investigator

SAS :49

cc: ONR S.F.(1)
ONR WASH.(3)
Office of Scientific Research
Fluid Mechanics Branch
Research and Development Command
P.O. Box 1395, Feltimore, Ed.(2)

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